

Application No. 09/993,413
Preliminary Amendment dated December 19, 2005
Reply to Office Action of September 7, 2005

REMARKS

Examiner's Interviews

Applicant's representative wishes to thank Examiner Vincent Kovalick for the courtesy of the Examiner's Interviews held on December 12 and December 13, 2005. These discussions regarded potential claim language related to suppressing generation of a stripe pattern due to black out, a consequence of driving at least four fields in a non-sequential order with respect to claim 1.

Status Of Application

Claims 1, 3-6, 9-11, and 14 were pending in the application. By this response, new claims 15-20 are added. Thus, the status of the claims is as follows:

Claims 1 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,184,853 B1 to Hebiguchi et al. ("Hebiguchi") taken with U.S. Patent No. 5,091,557 to Nagai et al. ("Nagai") in view of U.S. Patent No. 5,172,107 to Kanno et al. ("Kanno"), and further in view of U.S. Patent No. 6,501,454 B1 to Ozawa et al. ("Ozawa").

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of U.S. Patent No. 5,111,297 to Tsuji et al. ("Tsuji").

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of U.S. Patent No. 5,526,014 to Shiba et al. ("Shiba").

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1

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hereinabove, and further in view of U.S. Patent No. 6,243,061 B1 to Sandoe et al. (“Sandoe”).

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of U.S. Patent No. 6,628,251 B1 to Ishizuka (“Ishizuka”).

Claim 11 appears to be rejected for the same reasons as claim 6, *see* item 8 of the September 7, 2005 Office Action. However, claims 6 and 11 depend from claims 1 and 10, respectively. As seen above, claim 1 is rejected over a different combination of references than claim 10. Thus, it is not clear what combination of references should be the basis for rejecting claim 11. For purposes of responding to the September 7, 2005 Office Action, it will be assumed that the basis for the rejection for claim 11 is the same as that of claim 10 from which it depends.

Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of U.S. Patent No. 5,814,378 to Onishi et al. (“Onishi”).

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants respectfully request the approval of the substitute Formal Replacement Drawings filed on January 4, 2002.

Claim Amendments

Claims 1 and 10 have been amended to make explicit what was previously implicit, that the non-sequential scanning order is “to suppress generation of a stripe pattern due to black out.” This feature is disclosed in paragraphs [0004]-[0006] of the present specification. Claim 14 has been amended to require an optical absorption layer. The optical absorption layer corresponds to element 121 in Fig. 1 and is described in paragraph [0021] of the present specification. Thus, these changes do not introduce any new matter.

Claim 10 has been amended to correct an antecedent basis error by amending “liquid crystals” to “liquid crystal material.” This change is not necessitated by the prior art, is unrelated to the patentability of the invention over the prior art, and does not introduce any new matter.

New Claims

By this response, new claims 15-20 are added. Support for claims 15 and 16 is found in paragraph [0044] and corresponding Fig. 3. Support for claim 17 is found in paragraph [0007]. Support for claim 18 is found in paragraph [0010]. Support for claim 19 is found in paragraph [0011]. Support for claim 20 is found in paragraph [0016]. Thus, new claims 15-20 do not introduce any new matter.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1 and 6 under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno, and further in view of Ozawa, is respectfully traversed based on the following.

Claim 1 requires that the “driver drives the respective fields composing one frame so that a scanning order of the fields is non-sequential at least once ... so as to suppress

generation of a stripe pattern due to black out.” Thus, claim 1 not only requires the scanning order be non-sequential "to suppress generation of a stripe pattern".

The Office Action states Hebiguchi and Nagai do not teach a non-sequential scanning order. For this reason, the Office action further includes Kanno, a patent directed to solving an image flow issue observed in ferroelectric liquid crystal (“LC”) material when operated at low temperatures. In contrast, the LC material of claim 1 exhibits a cholesteric phase at room temperature, i.e., claim 1 is directed to a different type of LC material that has its own unique set of benefits and drawbacks relative to ferroelectric LC material. Thus, there is no indication that Kanno’s solution to low temperature image flow issues with ferroelectric LC material addresses the stripe pattern/black out issue of claim 1 with its cholesteric phase LC material as claimed. Lastly, Ozawa does not disclose non-sequential scanning but rather discloses a “line-sequential scanning circuit 18.” In summary, the combination of Hebiguchi, Nagai, Kanno and Ozawa fails to disclose or suggest each limitation of claim 1 and thus cannot render obvious the invention of claim 1.

Claim 6 depends from claim 1. As claim 1 is non-obvious over the combination of Hebiguchi, Nagai, Kanno and Ozawa, claim 6 is non-obvious for at least the same reason.

Accordingly, it is respectfully requested that the rejection of claims 1 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno, and further in view of Ozawa, be reconsidered and withdrawn.

The rejection of claim 3 under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Tsuji, is respectfully traversed based on the following.

Claim 3 depends from claim 1. Tsuji, like each of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose non-sequential scanning as required by claim 1. While the Office Action cites to column 4, lines 59-68 of Tsuji, column 4, lines 55-58 appear to

disclose that the ultimate image is formed of either the main scanning line or the main scanning line in conjunction with an interpolated scanning line. It therefore appears that Tsuji's scanned image is of the form 1-1-1-1 or 1-2-1-2, neither of which corresponds to the at least four fields scanned non-sequentially at least once to reduce a stripe pattern as required by claim 1. Furthermore, Tsuji is silent with respect to the issue of a stripe pattern due to black out. Thus, the combination of Hebiguchi, Nagai, Kanno, Ozawa and Tsuji fails to render claim 1 obvious. As claim 3 depends from claim 1, claim 3 is non-obvious for at least the same reason.

Accordingly, it is respectfully requested that the rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Tsuji, be reconsidered and withdrawn.

The rejection of claim 4 under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Shiba, is respectfully traversed based on the following.

Claim 4 depends from claim 1. Shiba, like each of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose non-sequential scanning as required by claim 1. The cited portion of Shiba (col. 2, lines 36-45) appears to teach traditional interlace scanning, i.e., for field 1, the odd lines are scanned (1, 3, 5, etc.) and for field 2, the even lines are scanned (2, 4, 6, etc.). This traditional interlace scanning does not disclose or suggest the at least four fields and non-sequential scanning of claim 1 "to suppress generation of a stripe pattern." Further, Shiba does not mention a black out problem. Thus, the combination of Hebiguchi, Nagai, Kanno, Ozawa and Shiba fails to render claim 1 obvious. As claim 4 depends from claim 1, claim 4 is non-obvious for at least the same reason.

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Accordingly, it is respectfully requested that the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Shiba, be reconsidered and withdrawn.

The rejection of claim 9 under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Sandoe, is respectfully traversed based on the following.

Claim 9 depends from claim 1. Sandoe, like each of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose non-sequential scanning as required by claim 1. The cited portions of Sandoe (col. 3, line 19 – col. 4, line 56 and col. 8, lines 5-11) are unrelated to non-sequential scanning, but rather are related to the delay in start timing between successive scan lines. This delay in start timing does not disclose or suggest the at least four fields and non-sequential scanning of claim 1 “to suppress generation of a stripe pattern.” Sandoe, like Hebiguchi, Nagai, Kanno and Ozawa, does not mention a black out problem. Thus, the combination of Hebiguchi, Nagai, Kanno, Ozawa and Sandoe fails to render claim 1 obvious. As claim 9 depends from claim 1, claim 9 is non-obvious for at least the same reason.

Accordingly, it is respectfully requested that the rejection of claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Sandoe, be reconsidered and withdrawn.

The rejection of claim 10 (and the assumed rejection of claim 11) under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Ishizuka, is respectfully traversed based on the following.

Ishizuka, like each of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose non-sequential scanning as required by claim 10. The cited portions of Ishizuka (col. 2, line 36 – col. 3, line 33 and col. 5, lines 42-55) are unrelated to non-sequential scanning, but rather are related to the various periods within a driving waveform and the delay in start timing between successive scan lines. These various periods and the delay in start timing do not disclose or suggest the at least four fields and non-sequential scanning of claim 10 “to suppress generation of a stripe pattern.” In addition, Ishizuka does not disclose a black out problem. Thus, the combination of Hebiguchi, Nagai, Kanno, Ozawa and Ishizuka fails to render claim 10 obvious.

Claim 11 depends from claim 10. As claim 10 is non-obvious over the combination of Hebiguchi, Nagai, Kanno, Ozawa and Ishizuka, claim 11 is non-obvious for at least the same reason.

Accordingly, it is respectfully requested that the rejection of claims 10 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Ishizuka, be reconsidered and withdrawn.

The rejection of claim 14 under 35 U.S.C. § 103(a), as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Onishi, is respectfully traversed based on the following.

As noted above, the combination of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose non-sequential scanning of at least four fields, a requirement of claim 14. In addition, the Office Action in item 9 notes the combination of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose a LCD wherein the LC layer exhibits a transparent state unless the maintain period terminates. Lastly, the combination of Hebiguchi, Nagai, Kanno and Ozawa, does not disclose “an optical absorption layer arranged behind said liquid crystal layer.” Onishi discloses a polymerizable compound for use in a LCD.

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However, Onishi, like Hebiguchi, Nagai, Kanno and Ozawa, fails to disclose non-sequential scanning of at least four fields and an optical absorption layer behind the LC layer. Because the combination of Hebiguchi, Nagai, Kanno, Ozawa and Onishi fails to disclose or suggest each limitation of claim 14, the combination cannot render claim 14 obvious.

Accordingly, it is respectfully requested that the rejection of claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Hebiguchi taken with Nagai in view of Kanno and further in view of Ozawa as applied to claim 1 hereinabove, and further in view of Onishi, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Preliminary Amendment increases the number of independent claims by 2 from 3 to 5 (3 claims previously paid for) and increases the total number of claims by 6 from 9 to 15 (20 claims previously paid for), but does not present any multiple dependency claims. Accordingly, a Response Transmittal and Fee Authorization form authorizing the amount of \$400.00 to be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260 is enclosed herewith in duplicate. However, if the Response Transmittal and Fee Authorization form is missing, insufficient, or otherwise inadequate, or if a fee, other than the issue fee, is required during the pendency of this application, please charge such fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

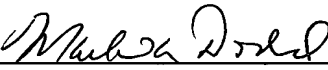
If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be

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construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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December 19, 2005

DAI 340457v.3